

IN THE SPECIFICATION

Please replace the three paragraphs beginning at page 24, line 22 of the specification and ending at page 25, line 20 of the specification with the following three paragraphs:

The outbound e-mail message 110 also contains a plurality of recipient fields 194 respectively labeled “TO:” “CC:” and “BCC:” that in this example each contain a list of recipient e-mail addresses (e.g., USERS 1..Q@ABC.COM, USER1..R@DEF.COM, and USERS1..S@HIG.COM) corresponding to various recipient computer users 144 (Figure 1) on the computer network 130. One objective of the present invention is to limit the amount of recipients 194 that can receive a particular outbound message 110.

As explained above in the background of the invention, a problem exists in conventional e-mail systems in that a computer user controlling an originator computer system 105 can essentially designate an unlimited number of recipients 194 for an outbound message 110 which causes significant processing burdens on hardware and software within the computer network 130. Furthermore, also as explained above, a computer user can attempt to fraudulently identify the account name value in the account name field 192 of an e-mail address 110 such that recipient computer users 194 will be unable to easily detect the true originator identity 212 of the sender of the outbound message 110. The quota enforcement system of the invention is able to curtail such abuses of e-mail transmissions by limiting the number of recipients 194 of outbound messages to a particular amount over a certain time interval for a particular user account associated with the true originator identity 212 of the computer user sending outbound messages 110. In other words, if a computer user generates an outbound message 110 with a large amount of recipients 194 (or generates many outbound message with a large or small number of recipients 194 in each message 110) and possibly attempts to fraudulently modify the account name field 192, the system of the invention is still able to enforce message quotas based on the true originator identity 212 that the computer user must provide during the establishment of the connection 166.

Figure 7 shows an example of message quota enforcement processing steps in accordance with one embodiment of the invention. Generally, a processor (not specifically shown) within the quota server 160 performs the message quota processing

steps shown in Figure 7 to determine whether or not an outbound message 110 should be transmitted to its intended recipient(s) 194 on the computer network 130.

Please replace the two paragraphs beginning at page 28, line 9 of the specification and ending at page 28, line 26 of the specification with the following two paragraphs:

At this point, the message quota processing of the invention can make the determination of whether or not the outbound message 110 is allowed to be transmitted or not onto the computer network 130 to one or more of the recipients 194. Generally, this is done by comparing the current message counts 214 against a corresponding message limits 216 to determine if any of the message counts 214 exceed the message limits 216.

In particular, in step 505, the quota server 160 determines if any message counts 214 exceed their corresponding message limits 216. If the quota server 160 determines in step 505 that any message count 214 exceeds its corresponding message limit 216, then processing proceeds to step 506 where the quota server 160 prevents further transmission of the outbound message 110 to any recipients 194 by setting a message transmission result (not specifically shown) to a “NO-TRANSMIT” value and reports this condition to a log file (not specifically shown). While not shown in the figures, at this point (step 505), the quota server 160 can return a “QUOTA EXCEEDED” message back to the originator computer system 105 based on the originator identity 212. Such a “QUOTA EXCEEDED” message might, for example, indicate to the computer user controlling the originator computer system 105 what his or her message limits 216 are and how long that computer user will have to wait before being able to transmit an outbound message using the account name associated with the originator identity 212.

Please replace the paragraph beginning at page 29, line 1 of the specification and ending at page 29, line 10 of the specification with the following paragraph:

In step 507, the quota server 160 updates the appropriate message counts 214 associated with the originator identity 212. In particular, in a preferred embodiment,

each message count 214-1 and 214-2 are incremented by the number of different recipient identities listed in all of the “TO:” “CC:” and “BCC:” recipient fields 194 within the outbound message 110. In this manner, the current message counts 214 for the originator identity 212 of the account sending the outbound message 110 are updated to take into account recipients 194 of the outbound message 110. For example, if there are ten (10) different recipients designated in the recipient field 194 in the outbound message 110, then the quota server can increment each of the message counts 214-01 and 214-2 by ten (10).

Please replace the paragraph beginning at page 29, line 22 of the specification and ending at page 30, line 8 of the specification with the following paragraph:

One embodiment of the invention provides a solution to this dilemma by having the quota server 160, in the update message count processing in step 507, compute the difference between the corresponding message limits 216 and the current message counts 214 (e.g., message limit 216-2 minus (-) message count 214-2 = 1, in this example). The result indicates how many copies of the outbound message 110 can be transmitted at the current time. In the instant example, only one copy of the message 110 can be sent at this time since the difference between the message limit 216-2 and message count 214-2 is one. The one copy of the outbound message 110 would be sent in this case to the first recipient listed in the recipient list 194 for that message 110. The quota server 160, in this embodiment, can then buffer the remaining copies of the outbound message 110 (one copy per each recipient designated in recipient field 194) for transmission at a later time, when the message counts 214 for their associated time intervals have been reduced, as explained below. Alternatively, the quota server 160 can discard any messages 110 for recipients 192 beyond the difference between message limit 216-2 and message count 214-2. In this manner, the system of the invention is able to limit the number of recipients 194 that can receive an outbound message 110 by one or more message limits 216.

Please replace the two paragraphs beginning at page 31, line 4 of the specification and ending at page 31, line 17 of the specification with the following two paragraphs:

In this manner, while receipt and transmission of outbound messages 110 to each recipient 194 results in the message counts 214-1 and 214-2 each being incremented by a value of one (1) for each recipient, concurrently with this process, as sufficient amounts of time elapse, the quota server 160 also can perform a process of decrementing the message counts 214 accordingly to credit the originator identity 212 with the ability to send more message 110 as periods of time elapse during which the originator identity 212 attempts to transmits no messages 110. The quota server 160 performs such incrementation and decrementation of the message counts 214 (i.e., updating of message counts) in step 507.

Upon completion of step 507, the quota server 160 performs step 508 to allow transmission of any copies of the outbound message 110 (one per designated recipient 194) that are within the message limits 214, as explained above, by setting a message transmission result to a “TRANSMIT” value for each recipient copy of such outbound messages 110.